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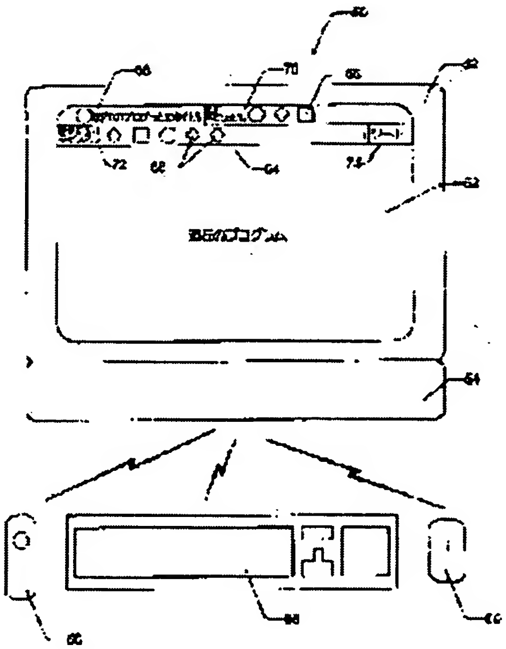
(54) CHANNEL BAR USER INTERFACE FOR AMUSEMENT SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a graphical user interface that assists a viewer, while the viewer navigates a channel by allowing the viewer to select and activate an arbitrary icon from among displayed icons, so as to allow a specific channel relating to an icon to select an amusement system to be turned.

SOLUTION: A viewer computing unit 50 displays video programs 62 on a display device 52 by a same or similar method to that of conventional television systems. The video program 62 may be a TV show, a movie or news. Signals received by an antenna and a cable head end or the like are converted into pixel data, which are displayed on a screen. The viewer computing unit 50 drives a TV explorer application program to control how to display the programs 62.



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CLAIMS

[Claim(s)]

[Claim 1] In the amusement system which can receive the video signal from many channels and can display this video signal within a video frame on a display again A user interface contains a graphical channel bar. The icon related to two or more channels which this CHANNERUBA arranged in the shape of [for navigating said channel] a straight line is included. Said CHANNERUBA When it shows coincidence with said video frame on said display when this user interface is called, and a viewer chooses one of said icons on said CHANNERUBA and operates The user interface characterized by enabling it to align said amusement system with the specific channel related to the icon which this operated.

[Claim 2] It is a user interface according to claim 1. Said CHANNERUBA It shows as one or more fields on said display. And said CHANNERUBA (1) -- that to which all the fields of said CHANNERUBA were located in the outside of said video frame, and (2), while some fields of said CHANNERUBA are located in the outside of said video frame the thing to which the field of others of said CHANNERUBA lapped on one part of said video frame, or (3) -- the user interface characterized by all fields being one of thing **s which lapped on one part of said video frame.

[Claim 3] It is the user interface characterized by being a user interface according to claim 1, and said CHANNERUBA containing a banner in order to identify current selection of which channel is made.

[Claim 4] It is a user interface according to claim 3. Said banner The mark chosen from the mark of one group is included. The mark of said one group A network LOGO, a channel number, a call alphabetic character, the title of the program carried by said current channel, [whether the time amount slot of a program and said program are supporting closed KYAPUSHONINGU, and] [whether audio track data, the audience rating of a program and said program are supporting a stereo sound or surround sound, and] a ******** [that data strengthening of said program is carried out] -- episode with the new show concerned -- or the application of re-broadcast and others -- call appearance -- the user interface characterized by consisting of an icon the bottom.

[Claim 5] It is the user interface characterized by being a user interface according to claim 1, and enabling it to jump said CHANNERUBA to said related channel when said viewer operates in one of said icons on said favorite CHANNERUBA by this including favorite CHANNERUBA which includes the icon relevant to the channel which a viewer likes which can be operated.
[Claim 6] It is the user interface characterized by being a user interface according to claim 1, and enabling it to jump said CHANNERUBA to said related channel recently includes the icon relevant to the channel chosen most recently which can be operated when said viewer operates in one of said icons on CHANNERUBA by this recently [said] including CHANNERUBA.
[Claim 7] It is the user interface characterized by being a user interface according to claim 1, and said CHANNERUBA containing the tool bar which includes the icon in which the actuation for controlling actuation of said amusement device is possible.
[Claim 8] It is the user interface characterized by being a user interface according to claim 1, and said icon on said CHANNERUBA corresponding to the channel for a television program, and the channel for the target details on a data network.
[Claim 9] It is the user interface characterized by being a user interface according to claim 1, and at least one icon on said CHANNERUBA corresponding to the channel specified in order to play a circumference media device.
[Claim 10] It is the user interface characterized by being a user interface according to claim 1, and said CHANNERUBA containing one or more hyperlinks to the program which can be performed.
[Claim 11] It is the user interface characterized by being a user interface according to claim 1, and said CHANNERUBA containing one or more hyperlinks to a target resource.
[Claim 12] It is the user interface characterized by to be included the tool bar which includes the icon in which the actuation for controlling actuation of favorite CHANNERUBA which includes the icon relevant to the channel in which it is a user interface according to claim 1, and a viewer likes said CHANNERUBA with CHANNERUBA which can be operated, and said amusement device the banner which identifies current selection of which channel is made, and recently which includes the icon relevant to the channel chosen most recently which can be operated is possible.
[Claim 13] It is the user interface characterized by being a user interface according to claim 12, having juxtaposed and arranged CHANNERUBA on the 1st level level said banner and recently, and having arranged said favorite CHANNERUBA under CHANNERUBA in the 2nd level level said banner and recently.
[Claim 14] It of said screen is a user interface which is a user interface according to claim 12, arranges said banner on one field of said screen, and is characterized by having arranged to the field to which CHANNERUBA and said favorite CHANNERUBA differed from said tool bar recently [said].
[Claim 15] CHANNERUBA, said favorite CHANNERUBA, and said tool bar are a user interface characterized by being user interfaces according to claim 12, and being able to arrange to said banner and said field different mutually [recently / said screen].
[Claim 16] In order to be a user interface according to claim 12 and for one of CHANNERUBA, said favorite CHANNERUBA, or said tool bars to maintain the tooth space in said CHANNERUBA recently [said], they are that folding is possible by turns and the user interface characterized by the ability to develop.
[Claim 17] The user interface which is a user interface according to claim 1, and is further characterized by including a movable focus along with said CHANNERUBA for each one selection of said icon, and actuation.
[Claim 18] The medium which can be computer [which is the operating system which has the instruction in which the computer activation for operating an amusement device is possible, and memorized said operating system incorporating the user interface of said CHANNERUBA according to claim 1] read.
[Claim 19] In the amusement system which can receive the video signal from many channels and

can display this video signal within a video frame on a display again The banner which identifies current selection of which channel is made for said CHANNERUBA user interface by having the processor to which said amusement device performs the CHANNERUBA user interface which can be called, and at least one control bar which includes the icon related to two or more channels arranged in the shape of [for navigating said channel] a straight line -- since -- the CHANNERUBA user interface which changes.
[Claim 20] It is the CHANNERUBA user interface characterized by being a CHANNERUBA user interface according to claim 19, and said control bar containing CHANNERUBA recently includes the icon relevant to the channel chosen most recently which can be operated.
[Claim 21] It is the CHANNERUBA user interface characterized by being a CHANNERUBA user interface according to claim 19, and said control bar containing favorite CHANNERUBA which includes the icon relevant to the channel which a viewer likes which can be operated.
[Claim 22] The CHANNERUBA user interface which is a CHANNERUBA user interface according to claim 21, and is characterized by including a means by which a viewer enables it to choose further whether it is made for which channel to appear in said favorite CHANNERUBA.
[Claim 23] The CHANNERUBA user interface which is a CHANNERUBA user interface according to claim 21, and is characterized by including further a means to choose automatically one or more channels for said favorite CHANNERUBA based on a viewer's viewing-and-listening pattern.
[Claim 24] It is the CHANNERUBA user interface characterized by being a CHANNERUBA user interface according to claim 19, and said control bar containing the tool bar which includes the icon in which the actuation for controlling actuation of said amusement device is possible.
[Claim 25] The medium which can be computer [which is the operating system which has the instruction in which the computer activation for operating an amusement device is possible, and memorized said operating system incorporating said CHANNERUBA user interface according to claim 19] read.
[Claim 26] It is the CHANNERUBA user interface which includes the icon related to two or more channels which the CHANNERUBA user interface arranged in the shape of [for navigate said channel] a straight line in the amusement system which can receive the video signal from many channels and can display this video signal within a video frame on a display again, and is characterize by said CHANNERUBA user interface draw the hyperlink to an object in which at least one actuation is possible.
[Claim 27] It is the CHANNERUBA user interface which is a CHANNERUBA user interface according to claim 26, and is characterized by said hyperlink being a thing to the target resource on a data network.
[Claim 28] It is the CHANNERUBA user interface which is a CHANNERUBA user interface according to claim 26, and is characterized by said hyperlink being a thing to the program which can be performed.
[Claim 29] The medium which can be computer [which is the operating system which has the instruction in which the computer activation for operating an amusement device is possible, and memorized said operating system incorporating said CHANNERUBA user interface according to claim 26] read.
[Claim 30] It is the amusement system which can receive a television signal and can display this television signal in the display frame on a display. A processor, The operating system performed on said processor so that the graphical user interface environment which supports presentation of at least one graphical window on said display may be offered, In the aforementioned amusement system with the application which has memorized in said memory, performs by said processor, and controls presentation of said television signal on said display and in which computer activation is possible The step as which said application which can be computer performed displays said television signal in said display frame between the 1st mode of operation, The step which displays said television signal in a graphical window between the 2nd mode of operation, It is the step which

displays CHANNERUBA with said television signal. And said CHANNERUBA It has an icon related to two or more channels arranged in the shape of a straight line. This icon When it operates, it is made to make a television signal which was made to switch a channel to said amusement system, and is different received. Moreover, said CHANNERUBA Application which is characterized by including the instruction in which the computer activation for performing the aforementioned step which has further a Windows icon for converting between said the 1st and 2nd mode of operation when it operates is possible and which can be computer performed.

[Claim 31] Application which is the application according to claim 30 which can be computer performed, and is characterized by including the computer executable instruction for performing the step which maintains the aspect ratio further appointed beforehand by restricting a size arrangement of said graphical window in said 2nd mode of operation and which can be computer performed.

[Claim 32] Application which is the application according to claim 30 which can be computer performed, and is characterized by including the computer executable instruction for performing further the step which determines the size of said CHANNERUBA for depiction within one of said display frame or said graphical windows and which can be computer performed.

[Claim 33] Application which is the application according to claim 30 which can be computer performed, and is characterized by including the computer executable instruction for performing the step which displays further the hyperlink to the target resource on a data network which can be operated in said CHANNERUBA and which can be computer performed.

[Claim 34] Application which is the application according to claim 30 which can be computer performed, and is characterized by including the computer executable instruction for removing said CHANNERUBA further after a viewer chooses an icon and which can be computer performed.

[Claim 35] In the amusement system which can receive the television program from many channels The step as which the approach of operating this amusement system displays the television program from one of said channels, It is the step which displays CHANNERUBA alternatively with this television program. And said CHANNERUBA the aforementioned step which has an icon related to two or more channels arranged in the shape of [relevant to other channels] a straight line -- since -- the amusement system actuation approach which changes.

[Claim 36] The amusement system actuation approach which is an approach according to claim 35 and is characterized by including the step which removes said CHANNERUBA further after a viewer chooses an icon.

[Claim 37] The amusement system actuation approach which is an approach according to claim 35 and is characterized by including further the step which displays a movable focus along with said CHANNERUBA for each one selection of said icon, and actuation.

[Claim 38] The amusement system actuation approach which is an approach according to claim 35 and is characterized by including further the step which displays the hyperlink to the target resource on a data network as one part of said CHANNERUBA.

[Claim 39] The amusement system actuation approach which is an approach according to claim 35 and is characterized by including the step which displays further TV channel icon relevant to the channel which carries said television program, and non-TV channel icon relevant to the channel which does not carry a television program.

[Claim 40] The viewer computing unit programmed to perform a step according to claim 35.

[Claim 41] The medium which commands a computer so that a step according to claim 35 may be performed and which can be computer read.

[Claim 42] It is the viewer computing unit which describes a television program on a display. A processor, The operating system performed on said processor so that the graphical user interface environment which supports presentation of at least one graphical window on said display may be offered, In order to offer the user interface which is useful to a viewer choosing between the channels which carry said television program, it is the television Explorer application which can be

performed on said processor. The aforementioned television Explorer application which constituted said user interface as CHANNERUBA which has two or more channel relation icons in relation to said channel, in order that [and] a viewer may enable it to choose one of said icons on said CHANNERUBA -- the input device which can operate with said operating system -- since -- the viewer computing unit which changes.
[Claim 43] It is the viewer computing unit characterized by being a viewer computing unit according to claim 42, and said television Explorer application making easy conversion between the full-screen mode which displays a television program by the full screen on said display, and the Windows mode which displays said television program in the graphical window by the aspect ratio appointed beforehand.
[Claim 44] It is the viewer computing unit characterized by being a viewer computing unit according to claim 42, and said CHANNERUBA containing a banner in order to identify current selection of which channel is made.
[Claim 45] It is the viewer computing unit which is a viewer computing unit according to claim 42, and is characterized by enabling it to jump said CHANNERUBA to said related channel by this including favorite CHANNERUBA which includes the icon relevant to the channel which a viewer likes which can be operated when said viewer operates in one of said icons on said favorite CHANNERUBA.
[Claim 46] It is the viewer computing unit which is a viewer computing unit according to claim 42, and is characterized by enabling it to jump said CHANNERUBA to said related channel recently which includes the icon relevant to the channel chosen most recently which can be operated when a viewer operates in one of said icons on CHANNERUBA by this recently [said] including CHANNERUBA.
[Claim 47] It is the viewer computing unit characterized by being a viewer computing unit according to claim 42, and said CHANNERUBA containing the tool bar which includes the icon in which the actuation for controlling actuation of said amusement device is possible.
[Claim 48] It is the viewer computing unit characterized by being a viewer computing unit according to claim 42, and said icon on said CHANNERUBA corresponding to the channel for a television program, and the channel for the target details on a data network.
[Claim 49] It is the viewer computing unit characterized by being a viewer computing unit according to claim 42, and said CHANNERUBA containing one or more hyperlinks to a target resource.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the amusement system which offers a video

program like television show through a channel. This invention relates to the computer-like user interface assisted in case a viewer navigates various channels at a detail.
[0002]
[Description of the Prior Art] The conventional television hardly offers assistance to the viewer who finds the program or station to wish and is navigating the inside of many channels utterly. Although the set top box of television or a cable displays a channel number, it is information provided only with this to a viewer in many cases. In a newer model, there are some which display a network name or its LOGO with a channel number. Although this user interface is customary though regrettable, it is especially convenient. Almost all viewers memorize the number of the channel included in their mind, and depend on moving to the channel included in these mind in one jump.
[0003] It is effective to memorize the channel included in mind, when offer of a channel is used to the local television market where a viewer is single few moreover. however, increasing dramatically expects the number of channels available although viewed and listened in a cable television network or a satellite television network -- having -- 500 channels -- or 1000 channels are becoming common. Although a certain viewer may not sense difficulty for memorizing if ESPN Sports Network is in a channel 29 at a viewer's market today, this same viewer may be troubled by memorizing that ESPN1 is in a channel 292, and ESPN2 is in a channel 564, and ESPN3 is in a channel 1008 tomorrow. Furthermore, to the viewer under travel which he has noticed that memorization is in a new market with a completely different channel number and a completely different network tie-up, it is hardly assistance.
[0004] Therefore, in case a channel is chosen, there are needs to the improved television user interface which can assist a viewer further. Until now, a certain amount of advance is made. In case Sony (Sony Corporation) chooses the channel included in mind, it is developing the user interface of one type which performs a certain amount of viewer reed stance. Drawing 1 shows the Sony television systems 20 which have television 22 and the remote control hand set 24. The hand set 24 is equipped with 10 digit numeric keypad 26, 4 directional-control carbon button 28a-28d, and the menu button 30 arranged in the center in this directional-control carbon button 28 in this illustrated example. Although the control carbon button of others, such as a power source, sound volume, VCR shuttle control, and mute, can also be prepared in a hand set 24, this drawing does not show.
[0005]
[Problem(s) to be Solved by the Invention] This Sony system 20 offers a user interface with the gestalt of a pop up menu 32, and this pop up menu appears in television 22, when a viewer pushes a menu button 30. A pop up menu 32 shows the list of channels included in five mind of a viewer. Although the emphasis bar 34 is located on the top alternative at first, it can scroll the favorite list top using a top / bottom carbon buttons 28a and 28c. It can define which channel a user configuration is possible for a favorite list, and a viewer displays in a pop up menu 32. In this user interface, a viewer can display immediately five channels of the top included in his mind, and one which lengthens interest most then can be chosen. This user interface mitigates the problem that the channel included in mind must be kept in mind.
[0006] this invention person etc. developed the new user interface which assists a viewer in channel navigation with the other control descriptions.
[0007]
[Means for Solving the Problem] This invention relates to the graphical user interface for amusement systems which assists the viewer, while the viewer is navigating the channel. This user interface is CHANNERUBA displayed with the channel by which current selection is made. This CHANNERUBA has an icon related to two or more channels arranged in the shape of [for navigating said channel] a straight line. Since a viewer enables it to choose and operate one of the arbitration of said icons, along with said CHANNERUBA, a viewer can move a controllable focus, and this can jump said amusement system to said channel relevant to said selected icon.
[0008] According to the example of 1 implementation, said amusement system is a computerized

viewing-and-listening unit which has a processor, memory, and the operating system of multitasking. Said operating system offers the graphical user interface environment which supports presentation of a graphical window. In order to offer said CHANNERUBA user interface (UI), application is performed on said processor. When using it with television programming, it is made for this application to certainly have it in the safe zone of video by deciding the size of said CHANNERUBA UI. A viewer calls said CHANNERUBA UI and input devices (a mouse, a keyboard, remote control hand set, etc.) enable it to operate said focus along with said CHANNERUBA.

[0009] Said CHANNERUBA UI contains the banner which includes the information about the channel by which current selection is made. Said program has [whether data strengthening of the following information, i.e., a channel number, an office call alphabetic character, a network LOGO, the name of the program currently performed by said present channel, the time amount slot of a program, and said program is carried out and] closed KYAPUSHONINGU for whether it is a stereo in this banner, or said program can include an alternate audio track in it. Said banner displays itself on the corner of said display, while the viewer is doing channel surfing using the channel rise / channel down control on an input device.

[0010] A viewer can call these control bars by actuation of a carbon button special [said CHANNERUBA / including three control bars again / on said remote control], or use of said mouse or a keyboard or the same actuation as this. These three control bars are displayed together with said banner, and present CHANNERUBA UI of full. A control bar contains CHANNERUBA, favorite CHANNERUBA, and a tool bar recently. CHANNERUBA includes the icon which said viewer arranged in the shape of [relevant to the channel chosen most recently] a straight line and which can be operated recently [said]. For example, CHANNERUBA shows the icon of three channels chosen most recently recently [said], and these are only one (that is, no one channel is twice shown in this list). Each icon can consist of a network LOGO, a program LOGO, a channel number, a station call alphabetic character, network names, or such combination.

[0011] Said favorite CHANNERUBA includes the icon relevant to the channel which said viewer likes most which can be operated. This favorite list can be made into what a viewer can constitute, or can be automatically table-ized based on a viewer's behavior pattern or the other heuristics methods.

[0012] Said tool bar includes the icon relevant to the control feature for operating said amusement system which can be operated. for example, the icon for helping to start the icon which makes a viewer's log on easy, the icon which turns OFF said amusement system, and a find dialog box, and for a viewer to find a specific program or a specific channel is included in said tool bar -- also making -- it is good. Said tool bar has the icon to which a viewer enables it to carry out the toggle of the television mode which displays a program by the full screen, and said program and CHANNERUBA again between the Windows modes restricted in one window. At this time, a viewer can control that program and CHANNERUBA that carried out windowing using ordinary windowing control, for example, they can perform minimizing said window, correcting that size, or moving it etc. Once it becomes Windows mode, said viewer can start the application of others, such as E-mail application, the Internet web browser, or ordinary computer application (word processing, a spreadsheet, finance / bank dealings).

[0013] According to another gestalt of this invention, said icon on said CHANNERUBA relates the both sides of the channel used for accessing the website on the channel used for receiving ordinary television programming (a movie, show, a sport, news, etc.), and the Internet, or other target details. Moreover, said CHANNERUBA can be constituted so that the hyperlink which became independent of every related channel may be included, and thereby, it enables a user to operate the target detail related directly from the CHANNERUBA.

[0014]

[Embodiment of the Invention] Drawing 2 shows the viewer computing unit 50 constituted according to one example of this invention. Shape was taken as a broadcast enabling mold personal computer

(PC), and this viewer computing unit 50 has incorporated tuner equipment, in order that this personal computer may receive a video data like an ordinary television broadcasting signal. The viewer computing unit 50 is equipped with the remote keyboard, a display 52, the central-process unit (CPU) 54 (although this shows as another thing, it is also incorporable in display casing), and the various input devices 56, for example, a remote control hand set, 58, and the remote mouse 60. Although each of these input device is combined with CPU54 through a wireless data link like IR (infrared radiation) link or RF (radio frequency) link, a keyboard and a mouse are combinable using an ordinary serial cable.

[0015] It does not pass over this broadcast enabling mold PC for one mere example of implementation, but many things are possible for it. The example of implementation of one alternative is a computer strengthening mold television set which has a processor, memory, and an operating system. Another example of implementation can also be used as television (generally called "web television" or "INTERNET TELEVISION") equipped with the web browser of the built-in for Internet access. Moreover, another example of implementation can be used as television equipped with the set top box (STB).

[0016] The viewer computing unit 50 shows the video program 62 on a display 52 by the same or similar approach as ordinary television. The video program 62 is TV show, or is a video program of a movie, news, a sport, or others. The signal received from an antenna, a cable head end, a satellite, or other receivers is changed into pixel data, and is displayed on a screen. The viewer computing unit 50 runs TV Explorer application, and controls how a program 62 is displayed. In case this TV Explorer application navigates between channels, it offers the useful user interface which assists a viewer again.

[0017] As shown in drawing 2 , TV Explorer application offers the graphical user interface (UI) constituted as CHANNERUBA 64 arranged along the edge of a video frame top. CHANNERUBA 64 is usually hidden from a screen, while the viewer is looking at the program 62. If a viewer operates the carbon button of one thing in the input device 56-60, this CHANNERUBA will appear. CHANNERUBA 64 has the icon 66 of a large number related to a channel, and these icons relate to the channel which receives a program and which carries out thing use. The icon is arranged in the shape of a straight line in a level field or a "bar." A different level bar identifies a group division of a different icon related to the different description. In the illustrated example of implementation, CHANNERUBA 64 consists of CHANNERUBA 70, favorite CHANNERUBA 72, and a tool bar 74 one banner 68 and three control bars, i.e., recently. This CHANNERUBA user interface is explained to a detail with reference to drawing 4 - drawing 6 below.

[0018] Drawing 3 shows the amusement system of the gestalt of the viewer computing unit 50 materialized as a broadcast enabling mold computer. The central-process unit 54 has a processor 80 (for example, x86 [of Intel] or the microprocessor of Pentium), volatile memory 82 (for example, RAM), and program memory 84 (for example, ROM, a flash plate, a disk drive, a floppy disk drive, CD-ROM, etc.). The viewer computing unit 50 is equipped with stereo I/O86 for interfacing with one or more input devices 56-60 (for example, a keyboard, a mouse, etc.), the computer display 52 (for example, VGA, SVGA), and a stereo system.

[0019] The viewer computing unit 50 is equipped with the tuner 90 aligned with the address of the digital-broadcasting receivers 88 (for example, a satellite parabola receiver, a microwave receiver, a multicast listener (multicast listener), etc.) and the suitable frequency of a wireless distribution network, or a broadcast network. The tuner 90 is constituted so that digital-broadcasting data and the digital data (the video / audio data of an analog are included in a software program, the programming information on the gestalt of a data file, and a list) of many gestalten which are different in a list may be received in a specialized format like an MPEG encoding-ized digital video / audio data. The viewer computing unit 50 has a modem 92 again, and this offers dialup access to the Internet or other data networks. A modem 92 can also be replaced with a network card, RF transceiver, or the equivalent thing of others which offer access to a data network again in other examples of implementation of a back channel.

[0020] The viewer computing unit 50 runs the operating system 94 which supports much applications. Program memory 84 is made to memorize an operating system 94, and when booting this amusement system, in order to perform on a processor 80, it is loaded to volatile memory 82. Preferably, an operating system 94 shall be an operating system of multitasking, and shall make the concurrency of much applications possible. Application or a document is shown in the field which this operating system drew specially [the display screen which this calls a "window"] using the windowing environment of a graphical user interface. One desirable operating system is the operating system of the Windows brand which Microsoft Corp. sells, for example, WindowsCE, Windows 95, and WindowsNT, Or it is the derivative version of others of Windows. However, the operating system of others which can use a windowing environment, for example, the Macintosh operating system of Apple Computer, Inc., and the OS/2 operating system of IBM can also be used so that it may understand.

[0021] One example of implementation of the broadcast enabling mold PC Gabe L.Newll and Dan Newell, Steven J.Fluegel and David S.Bryne and Whitney McCleary, James O.Robarts and BrianK. Moran and William B.McCormick, T. K.Backman, Kenneth J.Birdwell, Joseph S.Robinson, Alonzo Gariepy, and Marc W.Whitman, And are based on Larry Brader. It is indicated by the United States patent applications 08/503,055 under coincidence connection of the January 29, 1996 application entitled a "broadcast enabling mold personal computer." This application shall be transferred to Microsoft Corp., and shall be included in this indication by this reference.

[0022] The viewer computing unit 50 has the television Explorer application 96 which can be performed by the processor 80 memorized in memory 84. TV Explorer application 96 controls about how a program is displayed on a display 52. To this example of implementation, TV Explorer application enables television-like viewing and listening on a computer. Between the usual viewing and listening, this TV Explorer application 96 performs in the background, and that user interface is hidden from a viewer, and a full screen shows the video program of television show or others. If a viewer inputs commands (for example, a channel rise, a channel down, the input of a new channel number, etc.) with an input device, TV Explorer application will show a display a CHANNERUBA graphical user interface with a video program. Preferably, it realizes as DLL (dynamic link library)98, and this CHANNERUBA UI is memorized in memory 84, and can call this with TV Explorer application 96. Moreover, in the systems (for example, web television, TV equipped with the set top box, etc.) designed more by dedication to television viewing and listening, CHANNERUBA UI is also realizable as one part of the operating system doubled with the machine in alternative. Moreover, the viewer computing unit 50 has the web browser 99 which can be performed by the processor 80 memorized in memory 84 in order to act as the lender of the hypermedia document received from the resource of the target on the Internet.

[0023] Drawing 4 - drawing 6 shows the instantiation-display screen equipped with the various graphical configurations of CHANNERUBA UI taken in different operating state. Drawing 4 shows the screen 100 when using the direct channel selection through an electronic programming guide (EPG), when a viewer does a routine channel switch (or "surfing") using the channel rise, channel down, or digit input in an input device. CHANNERUBA UI 64 presents only the banner 68 which offers the information about the channel which made current selection during the actuation.

[0024] This banner 68 is the upper left corner of a video frame, laps partially with the current program 102, and is arranged to it. A banner 68 displays the information about the program 102 which indicated by current, for example, a network, LOGO 104 (for example, "eye" of CBS) of a channel, a channel number 106 (for example, channel "104"), a network or the call alphabetic character 108 (for example, CBS) of a channel, the title 110 of a program, and the time amount slot 112 of a program. The information about an available viewing-and-listening feature which the closed KYAPUSHONINGU icon 114 and an audio track icon express can also be included in this banner 68 again. a ******** [whether the audience rating (rating), the stereo sound, or surround sound of a program is available, and that data strengthening (data enhanced) of the program is carried out to the feature of possible others] -- episode with the new show concerned -- or re-broadcast etc. is included. Furthermore, a banner 68 can also display the icon of the letter distribution shown when the icon which other applications call, for example, a viewer, receives E mail message.

[0025] The above-mentioned information used for constituting a banner 68 can be periodically supplied to a viewer computing unit from a content provider, and the unit can be made to memorize it. This information can be supplied as one part of program supply in alternative again all over [of first ten of VBI (perpendicular blanking period) reserved for data] Rhine. The data source with another possibility is from the EPG application loaded to the viewer computing unit.

[0026] A banner 68 is immediately updated, when a viewer switches a channel. When a viewer inputs a new channel number for every digit using a remote control hand set or a keyboard, a banner 68 is shown as each digit was inputted into this. When these inputted digits have been recognized as a channel number, a network name, or a call alphabetic character of a station, a viewer computing unit performs alignment to the directed channel, and a banner 68 makes the suitable program information reflect. A banner 68 is stopped in the condition that it is visible between predetermined time amount, and after that a viewer does nothing from it continues, it is removed.

[0027] Especially drawing 5 is the screen 120 when a viewer calls CHANNERUBA UI of full. Pushing the menu screen key of a remote control hand set, moving a mouse pointer to the top of a screen, or a certain other commands that were specified perform the demand of CHANNERUBA UI 64 of this full of a viewer. Full CHANNERUBA UI 64 may be located along the top of a video frame, and may lap partially after the video program 102.

[0028] According to one possible example of implementation, TV Explorer application presents CHANNERUBA UI 64 and the video frame 102 within a HTML (Hypertext Markup Language) page. It is the subset of "SGML" (Standard Generalized Markup Language), and HTML is the language for a document expression, it carries out the former rise of the markup, and makes this free from the system to this language, and the dependency of processing again. the hypermedia contents which World Wide Web (or WWW or Web) uses -- SGML -- or if specified more, generally it is written by a "markup language" like HTML. In a HTML format, TV Explorer application can decide size to be a predetermined dimension for a video frame, and can arrange CHANNERUBA 64 as a surrounding edge of a video frame. Thus, it is made for TV Explorer application not to write CHANNERUBA only in a video safe zone certainly in the under scan / overscan field around writing and its video safe zone.

[0029] CHANNERUBA UI 64 of full consists of CHANNERUBA 70, favorite CHANNERUBA 72, and a tool bar 74 a banner 68 and recently. The banner 68 is the same as having described above with reference to drawing 4 . CHANNERUBA UI may be shown to one or more fields on a screen. In the example of illustration implementation, CHANNERUBA 70, favorite CHANNERUBA 72, and a tool bar 74 are horizontally arranged on top of a screen a banner 68 and recently. Moreover, in a substitute configuration, each bar may be displayed on the mutually distant field, for example, a banner 68 is put on the top of a screen, and Lycium chinense grows to a field (for example, field which extended the right-hand side of a screen to middle downward) different from it of a screen in a bar 70-74.

[0030] CHANNERUBA 70 includes the icon 120 which can operate a large number arranged in the shape of a straight line, and these icons relate to the channel which the viewer chose most recently recently. In this drawing, CHANNERUBA 70 shows E! of the channel icon of three propers related to the channel seen most recently, i.e., ESPN of a channel 136, the weather channel (The Weather Channel) of a channel 189, and a channel 822 recently. No channel icon is used as a duplex by this list, therefore the channel icon of a current program is not included in this list. The icon 66 related to a channel carries out a sequential list to that (for example, E of a channel 822!) to which it did not view and listen most recently from that (for example, ESPN of a channel 136) to which it viewed and listened most recently. By selection of the channel relation icon 120, a viewer does not need for it to be reminded of the channel number or office number, whenever it can switch quickly between

the channels seen most recently and a viewer is going to switch, and to input recently [these].
[0031] Favorite CHANNERUBA 72 includes the icon 122 of a large number arranged in the straight line relevant to the channel which the viewer likes most which can be operated. This favorite CHANNERUBA 72 is arranged under CHANNERUBA 70 the banner 68 in one level field, and recently. In this example, favorite CHANNERUBA 72 shows six channel icons related to ESPN of the channel 136 by which the viewer is pleased most, i.e., a channel, HBO of a channel 521, CBS of a channel 104, MSNBC of a channel 87, the AMENRIKAN online (AOL) of a channel 932, and the Disney (DISN) channel of a channel 222. Five of these icons contain the broadcast channel with these traditional, the cable channel, the premium channel, etc. to the channel (namely, ESPN, HBO and CBS, MSNBC, DISN) of a television program so that it may understand. The 6th icon referred to by the number 124 receives the channel of one website on the Internet (namely, AOL).
[0032] According to one gestalt of this invention, this CHANNERUBA can support both icons for channels which distribute the detail (target specification) of the icon for television channels, and the target on a data network like the Internet. Convergence is increasing between the contents offered through the Internet with available contents by a traditional cable TV and Broadcast TV. As for the website of TV relation and movie relation, the number is increasing quickly. For example, a computer user adds a user's television to making it align with a MSNBC cable channel, or is MSNBC about the latest news as the substitute. A website can be accessed. The source of a material becomes so important for a viewer less, and does not deserve attention as this convergence continues.
[0033] The example of drawing 5 shows that the AOL icon 124 has the available website of AOL by the channel 932. For a viewer, it is completely fair between TV relation icon and the Internet relation icon. Since the same user interface as a viewer switching to TV channel or switching to a website can be used for this, it is advantageous. This Internet relation icon can be found in CHANNERUBA 70 recently (when it chooses recently), therefore when active, it appears in a banner 68, so that it may understand.
[0034] TV Explorer application performed on the viewer computing unit 50 copes with the above-mentioned various selections. If a viewer chooses TV channel icon, the viewer computing unit 50 will perform alignment to the selected channel, and will start the display of the program. If a viewer operates the Internet channel icon, the viewer computing unit 50 starts an Internet web browser like Internet Explorer of Microsoft Corp., and loads the homepage of American Online. The virtual channel from which AOL is obtained for a viewer interface may contrastive actually be told by the actual channel as the Internet service develops, it weaves with television distribution and it is mixed.

[0035] According to another gestalt of this invention, CHANNERUBA UI 64 supports the raw hyperlink which can be displayed to a viewer. One target detail relates to the bottom of it at one hyperlink. This target detail identifies without ambiguity the document or resource used as a target although it is not usually visible to a user, and this is performed by usually specifying the name of the computer by which that document resides permanently, and the perfect file name of that document. By the WWW document, a target is specified using a "universal resource locator" (URL). One URL has described all about one specific resource with the need of getting to know although a web browser requires and being acted as the lender of it. This URL has described the pass and file name of that resource in the name of the protocol used for searching that resource, and a computer with it, and the list.
[0036] In this example, the hyperlink 126 is arranged in favorite CHANNERUBA 72. This hyperlink 126 has related URL"http://www.schwab.com" to the website of Charls Schwab & Co. which is a financial services company. The "http://" part of this URL has described the protocol, as for that alphabetic character "http", a hypertext transfer protocol (Hypertext Transfer Protocol), i.e., a browser, requires a document, and 1 set of Ruhr according to a remote server supplying that document is meant. The "www.schwab.com" part of URL is the name of the remote host computer holding the website of Schwab. If a viewer operates this hyperlink "Schwab", the viewer computing

unit 50 will start a web browser 99, and will act as the lender of the target resource which carried out the address by that URL. This hyperlink document is searched with a modem through the Internet, and is supplied to a viewer computing unit.

[0037] Use of a hypertext is not restricted to the Internet. The target resource which a hyperlink refers to is local in alternative, and can be found. For example, this system can carry out PURIKYASSHU (pre-cache) of the extra information before the broadcast as one part of data broadcasting for advertisement which advertises the show about a certain fixed show based on a prediction viewing-and-listening inclination. Furthermore, in various multimedia applications, a user makes it possible to navigate the part from which information contents differed using a hypertext. For example, in an encyclopedia program, cross-reference can be attached from using a hyperlink to the report related mutually in an electronic encyclopedia. Moreover, in this encyclopedia program, a hyperlink can also be used for specifying the information resource of RIMOTO like the WWW document located on a different computer.

[0038] As a concept, the target of a hyperlink can be made into the object of the type of arbitration on imagination, and the program which can be executed, a text or a multimedia document, a sound clip, an audio segment, a static image, a computer, a directory, and other hyperlinks are contained in this. By the WWW document, a hyperlink target is the file which can reside in the computer of arbitration linked to the Internet permanently in most cases. However, a hyperlink target can also be made into the specific location in a document (the document in a lender is included now).

[0039] According to another gestalt of this invention, one or more icons (not shown) to a circumference media device like a video cassette recorder (VCR) or a digital videodisc (DVD) player can also be included in CHANNERUBA. Typically, the map of these devices can be carried out to an intact channel. The icon to which CHANNERUBA UI expresses these VCR or a DVD player in such a case can be assigned, and when these icons operate, a viewing-and-listening unit can be aligned to the channel relevant to VCR or a DVD player. The icon of VCR or DVD is treated as other channel relation icons, therefore can appear in CHANNERUBA 70 or favorite CHANNERUBA 72 recently.

[0040] The focus 130 is movable along with CHANNERUBA 64 (again this example recently CHANNERUBA 70) in order to emphasize a different icon. The focus 130 is shown as a frame which borders the selected icon. This focus can be carried out by the approach of many [like], such as raising the selected icon visually and making it change the color of an icon, display the rectangle which moves to the surroundings of that icon, more visible to a foreground, etc., when chosen. Furthermore, this focus can also be carried out as a pointer [like], although generally used with the personal computer. The example with still more nearly another possibility of a focus 130 is the thing of a chip pointer, and now, a pointer identifies an icon and it offers explanation of the icon which adjoins the pointer, displays a text box then, and the pointer is referring to. When the information which changes dynamically about the icon can be made to include, for example, one favorite channel icon is chosen, the name of the program by which current performance is carried out by the channel may be displayed on such a text box in a text box.

[0041] a viewer moves a focus 130 along with CHANNERUBA 64 using one of input devices according to or the thing for which a mouse is operated for example, the thing for which the direction pad or arrow key of a remote control hand set is operated, or the arrow key of a keyboard is pushed. A focus can be constituted so that free selection of the icon of arbitration may be enabled regardless of location-sequence so that according to sliding for every icon or using a mouse pointer etc. If located on the icon which the focus once chooses, the icon will operate clicking a mouse key or by [which touch the keys of the enter key of a keyboard] performing depending especially or pressing the actuation key of a remote control hand set etc.

[0042] The channel with which it expressed in favorite CHANNERUBA 72 is initialized at the time of sale. For example, a manufacturer or a retail store may set the favorite list as 1 set of predetermined channels to a corresponding television market. Moreover, as a substituting method, these channels can also be set up based on the selection (liking of population statistical information and a genre etc. is included) which a viewer performs between initial configuration phases. After purchase, through an easy menu interface, it can carry out, and by this, a viewer adds an icon or a viewer can remove these channels for a reconfiguration. In the example of drawing 5 , the additional icon 132 is formed as one part of favorite CHANNERUBA 72, and the addition of a new channel is made easy. While the viewer is looking at the channel (namely, a website, a premium channel, or a regular channel) included in one mind, a viewer will create immediately the icon to which a viewer computing unit expresses the channel by which it is indicated by current, if the additional icon 132 is operated. Thereby, the icon becomes one part of favorite CHANNERUBA 72, and offers the shortcut to the channel always. When the tooth space in favorite CHANNERUBA is restricted, the icon of the minimum thing of the channels included in mind may be removed, and an entering icon may be added to new, in addition mind.

[0043] Moreover, as a substituting method, the icon listed in favorite CHANNERUBA 72 can also do ** developed based on a viewer's use pattern. For example, the viewer computing unit 50 can carry out the monitor of the "hit" to each channel automatically, and can list the icon relevant to the channel which collected the hits of the highest number by the priority. Moreover, heuristics methods other than this can also be used.

[0044] The channel relation icon 120,122 displayed in CHANNERUBA 70 and favorite CHANNERUBA 72 recently so that it might understand is three elements, i.e., a network, or the LOGO (for example, "eye" of CBS) of a channel, and a channel number. (for example, channel "104") And a network or the call alphabetic character of a channel (for example, CBS) It forms. The other examples of implementation may realize an icon only by one or two things of these elements. Furthermore, an icon is it being good also as another symbol showing the specific channel which a viewer's creates, for example, expressing ESPN with a "football" icon or expressing the weather channel with a "snow" icon etc. Essentially, a channel relation icon can be made into the symbol of the arbitration relevant to a specific channel, language, numbers, or such combination.

[0045] If drawing 5 is referred to again, the tool bar 74 is shown in the condition of having folded up in order to protect the precious screen space in a CHANNERUBA field. When a viewer operates this small field, a tool bar 74 crosses favorite CHANNERUBA 72, develops, and the icon in this tool bar is made to appear.

[0046] Drawing 6 shows the screen 140 in the condition that the tool bar 74 developed in the bar condition of full. This tool bar 74 contains the icon 142-148 which controls actuation of the viewer computing unit 50 and which can be operated. In this example, the tool bar 74 shows the list of an icon 142, the "find show (Find Show)" "sign-on" icon 144, and icons 146 and "Windows" "TV-off" icons 148. The "find show" icon 142 can start a find dialog box, and, thereby, a viewer can input an alphabetic character or a number in the search of a channel, a program, a network, the specific theme, etc. A viewer enables it, as for the "sign-on" icon 144, to log on to this amusement system first. This icon operates, when a viewer turns ON this system first, and the password for restricting to the viewer who had viewing and listening approved by this or the demand of a key is included. In addition, requiring viewer discernment through log on procedure makes possible viewer authorization level which is [restrict / that a young family member views and listens to a channel of a certain kind] different. The "TV off-" icon 148 starts the cutoff sequence which terminates actuation of this computer viewer unit.

[0047] A viewer enables it to convert the "Windows" icon 146 between a full-screen mode of operation and a Windows mode of operation. Between the usual viewing and listening, a television signal displays within a full-screen frame. CHANNERUBA is piled up on it along the circumference of the top of a frame, when this can be seen. If a viewer operates the this "Windows" icon 146, TV Explorer application will turn into windowing form application on a screen, and will restrict a television signal and CHANNERUBA in a graphical window.

[0048] Drawing 7 shows the screen 160 between Windows modes of operation. Here, the traditional television screen has changed TV Explorer application into the computer-like screen restricted in the active window 162. This display screen has taken the appearance and feel of a user interface general to the computer user of a Windows operating system. The "start" menu button 164 and the software carbon buttons 166 and 168 of others to an active program are displayed along with a carbon button taskbar. In this mode, a viewer can start the application of E-mail, word processing, and a spreadsheet, or the application of others like a game by using this viewer computing unit as an ordinary personal computer. In itself, it is a windowing form program, it can minimize according to liking of a viewer, or can change in size, or TV Explorer application can be made into a new form, and on the other hand, when it is "letter box" television viewing and listening, it can maintain the standard television aspect ratio of a horizontal 16 to a horizontal 4 or a perpendicular 9 to a perpendicular 3.

[0049] In the above, this invention was explained in the vocabulary somewhat specified about structure and the description of an approach. However, although it should be understood, since the means indicated here is what constitutes the instantiation-gestalt which carries out this invention, it does not limit this invention to this described specific description. Therefore, this invention charges the protection about both the gestalt which is within the limits of [proper] the publication of the claim of the attachment appropriately interpreted according to the doctrine of equivalents and the other trial principles, and modification.

[Translation done.]

* NOTICES *

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damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] Drawing which is assisted in case a channel is chosen, since a viewer is viewing and listening by showing the predetermined list of favorite channels using a pop up menu and in which showing the television systems of the conventional technique.
[Drawing 2] Drawing showing the viewer computing unit by one example of this invention.
[Drawing 3] The block diagram of a viewer computing unit.
[Drawing 4] It is the instantiation screen Fig. in which a viewer shows the CHANNERUBA graphical user interface (UI) displayed during a channel switch.
[Drawing 5] The instantiation screen Fig. showing CHANNERUBA UI when a viewer demands the navigation reed stance of full.
[Drawing 6] The instantiation screen Fig. showing CHANNERUBA UI when a viewer calls the tool bar part of UI.
[Drawing 7] The instantiation screen Fig. showing a Windows mode of operation.

[Translation done.]

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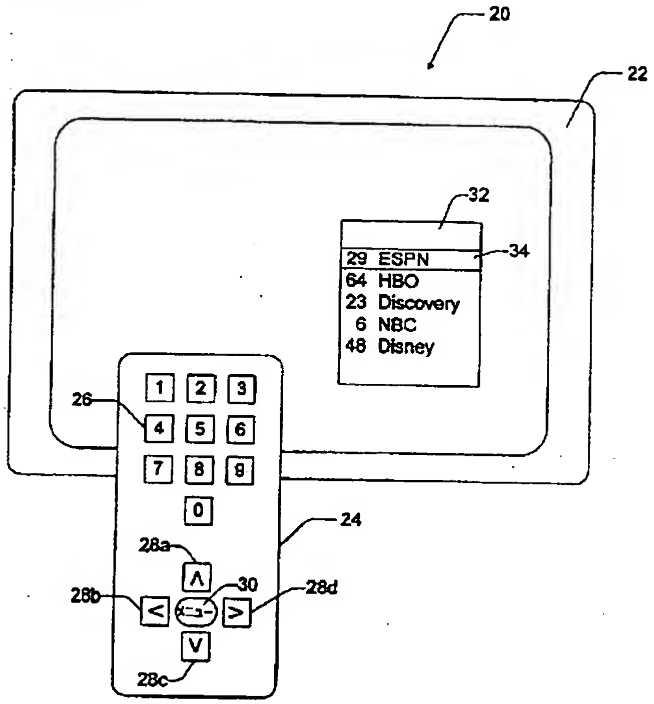
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

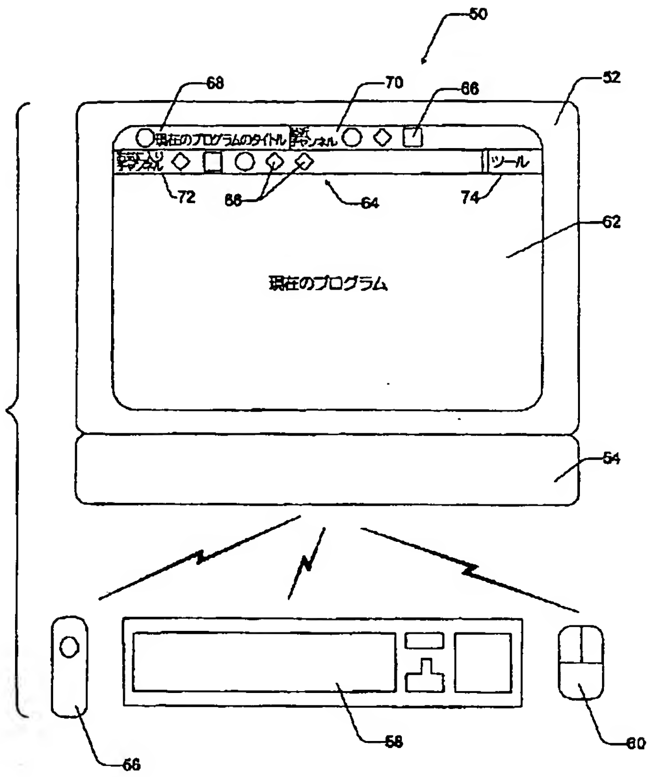
DRAWINGS

[Drawing 1]

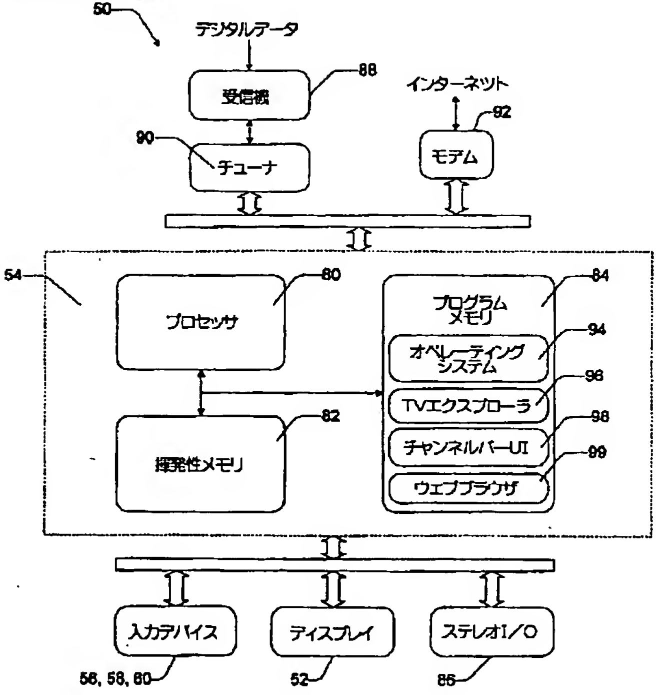

20
22
32
34
29 ESPN
64 HBO
23 Discovery
6 NBC
48 Disney
26
1 2 3
4 5 6
7 8 9
0
24
28a
28b
30
28d
28c

従来技術

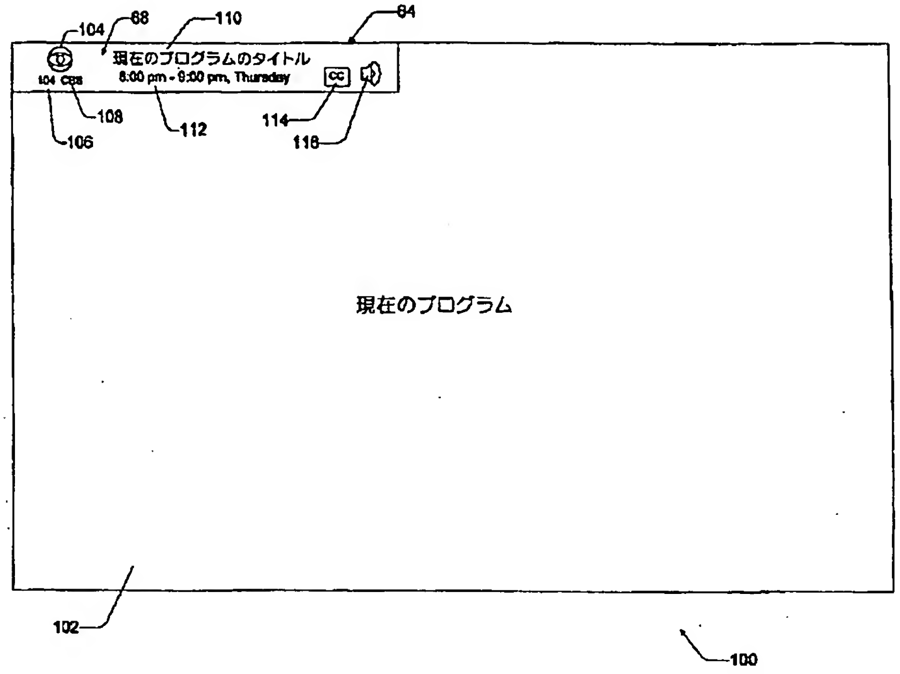
[Drawing 2]


50
68
70
66
52
現在のプログラムのタイトル
最新チャンネル
お気に入りチャンネル
ツール
72
66
64
74
62
現在のプログラム
54
66
58
60

[Drawing 3]

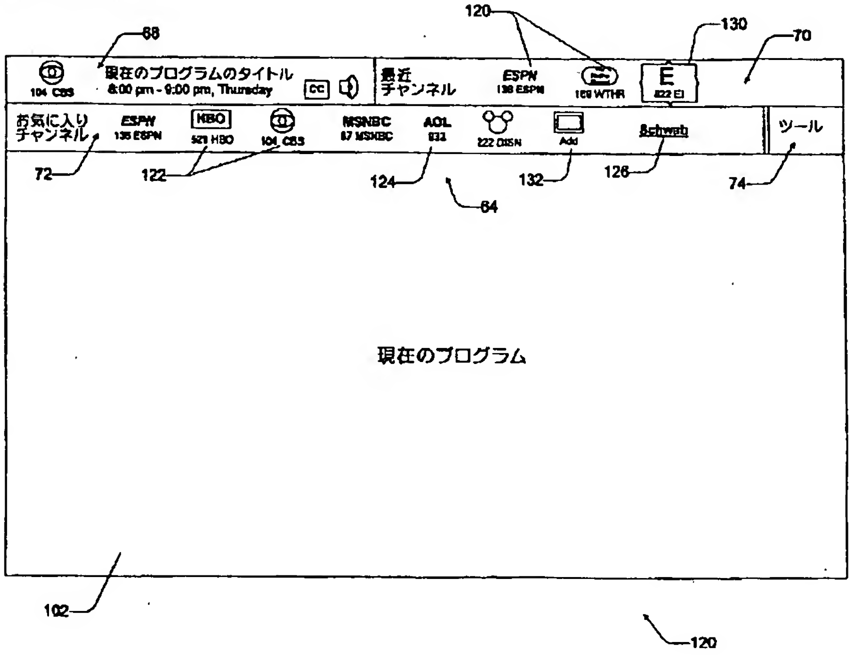

50
デジタルデータ
受信機
88
インターネット
92
90
チューナ
モデム
54
80
84
プロセッサ
プログラムメモリ
94
オペレーティングシステム
96
TVエクスプローラ
98
チャンネルバーUI
99
ウェブブラウザ
82
揮発性メモリ
入力デバイス
ディスプレイ
ステレオI/O
56, 58, 60
52
86

[Drawing 4]



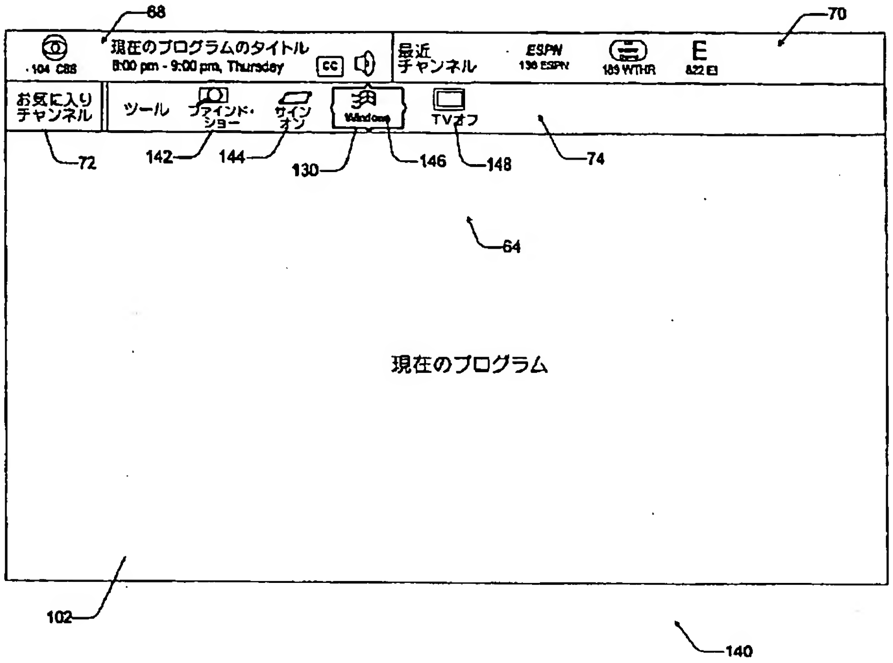
104
68
110
64
現在のプログラムのタイトル
8:00 pm - 9:00 pm, Thursday
104 CBS
CC
108
106
112
114
116
現在のプログラム
102
100

[Drawing 5]

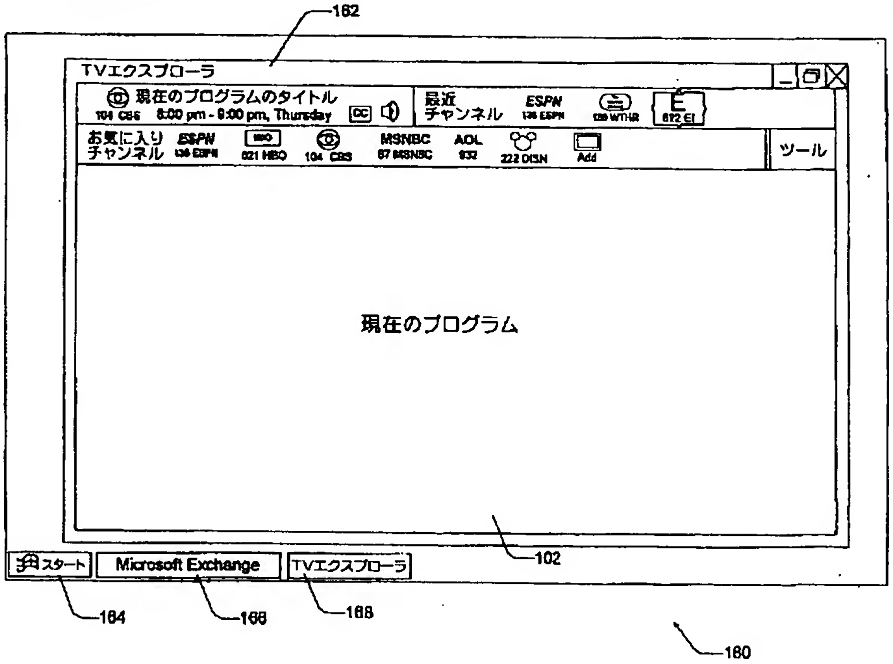


120
130
70
68
104 CBS
現在のプログラムのタイトル
8:00 pm - 9:00 pm, Thursday
CC
最近
チャンネル
ESPN
138 ESPN
169 WTHR
E
822 E!
お気に入り
チャンネル
ESPN
135 ESPN
HBO
521 HBO
104 CBS
MSNBC
87 MSNBC
AOL
833
222 DISN
Add
Schwab
ツール
72
122
124
132
126
74
64
現在のプログラム
102
120

[Drawing 6]


68
70
104 CBS
現在のプログラムのタイトル
8:00 pm - 9:00 pm, Thursday
CC
最近チャンネル
ESPN
136 ESPN
189 WTHR
E
822 EI
お気に入りチャンネル
ツール
ファインド・ショー
サインオン
Windows
TVオフ
72
142
144
130
146
148
74
64
現在のプログラム
102
140

[Drawing 7]


162
TVエクスプローラ
現在のプログラムのタイトル
104 CBS
8:00 pm - 9:00 pm, Thursday
CC
最近チャンネル
ESPN
136 ESPN
139 WTHR
E
872 EI
お気に入りチャンネル
ESPN
136 ESPN
821 HBO
104 CBS
MSNBC
67 MSNBC
AOL
932
222 DISN
Add
ツール
現在のプログラム
102
スタート
Microsoft Exchange
TVエクスプローラ
164
166
168
180

[Translation done.]